

History of early Western Australian herbaria

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Abstract

Early official herbarium collections in Western Australia date from the 1890s when both the Museum and Department of Agriculture were thought to have been active. Most early collections left the state, but by 1916 the above organisations had been joined by the Forests Department in gradually building up independent collections of pressed specimens. The decision was made in 1928 to merge the three herbaria into a single State Herbarium. This was finally fully implemented in 1959 and the name changed to Western Australian Herbarium in 1970.

This paper traces the history of Western Australian herbarium collections, official and private, as well as the botanists associated with them, prior to the formation of the official State Herbarium in late 1928 or early 1929.

Prior to the 1890s the Western Australian flora had been studied by a host of visiting botanists and explorers who made collections, firstly along the coast (e.g. Dampier 1699; Menzies 1791; Labillardière 1792, Leschenault, Guichenot, Brown 1801; Gaudichaud 1817 & 1820; Cunningham 1817–1822; Baxter 1823–1825 & 1828–1829; Fraser 1827) and then, following settlement, further inland (e.g. Huegel 1833; Drummond c. 1829–1851; Preiss 1838–1842; Maxwell 1858–1875; Mueller 1867, 1877).

In the absence of a suitable repository in the colony, many of the above collections were sent to Europe. There was, however, an early opportunity for the government to establish a herbarium in the Swan River Colony. In a letter sent to Governor Hutt in October 1839, Ludwig Preiss (1811–1883) offered a set of his natural history collections to the British Government. The collection was priced at £3,000 and contained plant, animal and geological specimens. The plant collection contained perhaps 1,500 different species, including both cryptogams and phanerogams (Erickson 1969, McGillivray 1975). To its discredit, the Government found Preiss's terms excessive and declined his offer. Had it been purchased, Preiss's collection may have been incorporated into a herbarium in Britain. However, had it been housed in Perth, it could have formed the nucleus of a very fine public herbarium of Western Australian flora.

It was not until the closing years of the 19th century that government collections, two in fact, had their beginnings in Western Australia. The earliest general collection was probably that of the Museum which, following its establishment in 1891, began to receive interesting and useful specimens presented to it by members of the public (Anon. 1965). Presumably some pressed plant specimens would have been included among them. The Bureau of Agriculture,

formed in 1894, appointed Alexander Morrison as a botanist in 1897. He doubtless began a herbarium collection of the plants which concerned him, principally poisonous plants as will be shown later.

Among the early documents which have so far come to light, precious few facts and figures have been discovered relating to the history of these embryonic herbaria. As the personalities concerned with them are a little better documented, I begin with a brief account of B. H. Woodward (of the Museum) and Morrison.

Bernard Henry Woodward (1846–1916)

Woodward, a member of a distinguished English family (Hall 1978), was Director of the Museum and Art Gallery from 1889 to 1916, during which time he periodically forwarded specimens to the Bureau (later Department) of Agriculture for determination. In a letter dated 29 July 1897 he referred to poison plant data he had collected 'three years ago' (Woodward 1897a) indicating that he was himself an active collector. An earlier letter of 25 June 1895 asked for a timber specimen accompanied by a botanical specimen or description 'to enable the botanical name to be ascertained' (Woodward 1895). In the files of the Western Australian Museum there are letters advising of the return of these specimens, or most of them. It must be assumed that the specimens were being added to a Museum herbarium: the earliest such letter is dated 25 October 1897 (Woodward 1897b).

In view of the above, a starting date of around 1894–1895 seems probable for the Museum herbarium. Since no mention is made in correspondence of any staff botanist, Woodward himself was presumably the curator. Although the Bureau of Agriculture existed at this time it seems unlikely that a herbarium would have been started much before the appointment of Morrison. Therefore, the Museum probably originated the first official State collection of herbarium specimens.

Alexander Morrison (1849–1913)

Morrison was the first person in Western Australia to be appointed to an official government position as a botanist. A retired medical practitioner, at the age of 48, he joined the Bureau of Agriculture on 1 July 1897,

* Ed. note: John Green retired from the Western Australian Herbarium on 31 Dec. 1987. Helen Cohn, Beng Siew Mahon, Bruce Maslin and I are responsible for a number of changes to the original manuscript.

at a salary of £230 per annum. Apparently he continued to perform his botanical duties until his retrenchment on 19 June 1906 (Anon. 1914). This suggests that he was in continuous employment with the Government, being one of the small staff of the Bureau absorbed by the Department of Agriculture in 1898. In curious contrast, however, is the statement made by the Secretary of the Bureau to J. J. Lee Steer M.L.A., in a letter dated 30 October 1897, that 'Dr Morrison was employed by the Bureau for a specific purpose viz., to catalogue and describe the poison plants of Western Australia for the "Settlers' Guide". This work is now completed, and Dr Morrison severs his connection with the Bureau this month.' (Secretary of Bureau of Agriculture 1897). Whatever the significance of the last sentence, Morrison evidently did not permanently sever his connection with the Bureau, continuing to serve it, and later the Department, until his retrenchment as well as afterwards as a private consultant.

Between 1906 and 1912 Morrison also undertook honorary botanical work for the Museum, mostly identifications, and made large collections of plants in the Stirling Ranges, 'at the instance of the Government' (Anon. 1914, p. 109). Whether any specimens found their way into a government collection is not known, but it seems likely that one set was added to his private herbarium which, by 1912, occupied fifty cases (Anon. 1914).

There is some confusion over Morrison's title and stipend (Serventy 1970). Despite the fact that he sometimes styled himself 'Government Botanist', even in some official reports (Muir 1901), I believe his position was only ever officially designated as 'Botanist'. The former appellation is an understandable and reasonable one for a civil servant, but the only person to occupy a position officially designated 'Government Botanist' was C. A. Gardner, between 1929–1960. On the question of Morrison acting in an honorary capacity, there is abundant evidence that he drew a salary from the Department of Agriculture between 1897–1906, and received botanical consultant fees afterwards, although he may have acted in an honorary capacity at the Museum.

Morrison was an admirable person to occupy the role of first botanist: he is said to have been painstaking, kindly, scrupulously honest and an indefatigable collector (Anon. 1914). It is regrettable that he suffered the ignominy of being retrenched and his position rendered vacant. This was presumably to effect necessary economies but perhaps was also a result of his falling out of favour with the administrators, as hinted in the rather peremptory 'Dr Morrison severs his connection with the Bureau this month'. Morrison took up medical practice again, in Perth, after his retrenchment in 1906, as well as performing botanical consultancy work. He continued to be active in scholarly botany, presenting a lecture 'Vegetation and Rainfall' at the Western Australian Museum (Morrison 1910), revising the official *Year Book of Western Australia*, and advocating botanical and forest reserves. It is somewhat surprising that in 1912, at the age of 64, he departed for Victoria, taking up a position with Professor A. J. Ewart at the National Herbarium of Victoria (MEL). Unfortunately he was to die only a year later.

Morrison bequeathed his herbarium to the University of Edinburgh, from which he graduated. One can only guess why he saw fit to do this, when it could have made a valuable addition to the Museum or Department of Agriculture collections, both by then well-established. However, some of the collections were returned to Western Australia (PERTH) by way of donation 60 years later while others found their way to Kew (K) and Brisbane (BRI).

Less than a month after Morrison's retrenchment Woodward asked the Museum Committee to write to the Minister for Agriculture asking for the Department's 'valuable Botanical collection' to be deposited for safe keeping in the Museum. This was done, as indicated by a return letter a year later (Anon. 1907), asking for a suspected poison plant to be compared with specimens 'from this Office, and now in your keeping'. These letters contain two most interesting points: one, that the Department of Agriculture did have a herbarium, a fact that could only be surmised on earlier evidence; and secondly, that the Museum became for a few years the sole repository of official herbarium collections, presumably under Morrison's honorary curatorship and doubtless encouraged by Woodward's interest. Tantalisingly, no evidence has been found suggesting even approximately the size of either collection at this time.

We still do not know when the Department of Agriculture herbarium was started. However, since Morrison was known as 'all his life a collector of botanical specimens' (Anon. 1914, p. 109), and since the Department's collection was described as valuable nine years after his appointment to the Bureau, we can assume that he contributed to the official collection, as he did his own, commencing the year of his appointment, 1897. Pending the discovery of new evidence, this then, seems to be the best estimate of the year the collection was started.

The emergence of two official collections in Western Australia in the 1890s, and the official appointment of Morrison as Botanist, provided a much-needed focus for collections of the local flora. Even around this time, however, significant collections were being made by visitors (Helms 1891–1892; Diels & Pritzel 1901–1902; Dorrien-Smith 1909). Most of their specimens still left the state, as indeed did those of the non-botanist state official, W. V. Fitzgerald (1905–1906). (Many collections also left the state in later years, even those gathered by public servants, such as F. Stoward and W. M. Carne, who were responsible for the state collection. Some significant collections were eventually repatriated. For example, some specimens gathered by C. R. P. Andrews were received by W. E. Blackall and came eventually to be housed in PERTH. And Fitzgerald donated a set of specimens to the Department of Agriculture, of which many duplicates went to J. H. Maiden in NSW.)

Frederick Stoward (1866–1931)

In 1911, about the time of Morrison's departure, and after an interval of five years without a botanist, the Department of Agriculture appointed Dr F. Stoward as Botanist and Pathologist. At the same time its collection of plant specimens, mainly poison plants, was retrieved from the Museum. In the meantime, the

Department's botanical work had been performed, or at least reported on, by the entomologist L. J. Newman (1910, 1911), whose botanical duties comprised mainly identifications of weeds and poisonous plants.

At the time of his appointment Stoward was 45 years of age. He had migrated to Australia 30 years before. He specialized in fermentation and chemical processes and before this appointment worked mainly in Adelaide (Hall 1978). His name appears in the Department of Agriculture's annual report for 1911–1912. The same report also contains the first clear reference to an actual herbarium: 'considerable additions have been made to the Departmental herbarium collection which, as time progresses, will be further augmented' (Stoward 1912, p. 49). Native flora, alluded to for the first time in this report, was included, along with weeds and poisonous plants.

By the following year, Stoward was able to report a 'very considerable increase in the number of plant specimens . . . received for determination', leading to 'the very necessary undertaking of re-arranging and cataloguing the collection of plant specimens which at present comprise the Departmental Herbarium . . . mainly carried out by my assistant Mr Wakefield' (Stoward 1913, p. 61). Only the vaguest indication of the size of the herbarium is given, when Woodward (1913) referred to Stoward as having charge of 'the greater part of the Government botanical collections'. Evidently, by this time the Department of Agriculture's herbarium had overtaken in size that of the Museum. (This occurred despite the fact that Stoward's own collections from Western Australia are today found in other herbaria, including BM, K and MEL, but are largely unrepresented in PERTH.)

Two further annual reports of the Department of Agriculture, covering the period up to 1916, indicate no more than quiet routine in the herbarium, still under Stoward as Botanist and Plant Pathologist. In another department, however, a new herbarium had suddenly emerged.

The forest herbarium

In 1916 the Conservator of Forests announced the establishment of a 'forest herbarium. . . placed in the hands of District Ranger Schoek' (Lane-Poole 1917, p. 6). Stoward was thanked for undertaking the work of identifying the material. Of interest is the practice, begun in this report and continued for some years, of listing the botanical names of specimens collected, identified and incorporated during the year. The total for 1916 was 76 plants identified to species, as well as a handful to genus or having affinity to a named species. Somewhat similar-sized lists appeared in 1917, 1918 and 1919. However, in 1920, only 34 specimens were added to the collection as the officer in charge of the herbarium was assigned to other duties (Lane-Poole 1920, p. 8).

Desmond Andrew Herbert (1898–1976)

In 1917, Stoward left the Department of Agriculture to return to his family wine business in South Australia. At this point botanical work was placed under the Agricultural Chemist, E. A. Mann, who was 'ably assisted in the Botanical section by Mr D. A. Herbert,

appointed Botanical and Pathological Assistant in May 1918' (Trethowan 1919, p. 5). The Branch was rehoused in the office of the Government Analyst in July 1918, botanical work being 'entirely transferred from the Department of Agriculture, where it had been previously housed' (Mann 1919, p.24). Despite the foregoing wording, this seems not to have involved a transfer to a different government department. The Government Analyst may have been a somewhat independent Branch, loosely called a 'Department', yet still reporting to the Minister for Agriculture.

Mann (1919) reported on Herbert's considerable achievements in the first year. In addition to routine work these included the elucidation of the parasitic nature of *Nuytsia floribunda* (Labill.) R. Br. ex Fenzl. The re-arrangement and classification of the herbarium and the establishment of a mycological herbarium were listed as requirements for 'further increasing the effectiveness of this branch' (Mann 1919, p. 24).

In the same report, Herbert, who had immediate charge of botanical work, gave the earliest known, though misleading, indication of the size of the collection: 13,000 (evidently an error for 1,300) specimens, 'mostly Western Australian species, but there are a number from the eastern States and some German species, besides specimens of those exotic plants which have become naturalised' (Herbert 1919, p. 29).

By 1920, Herbert, having now acquired the degree of M.Sc., was Economic Botanist and Pathologist and had described two new species of native plants, *Isopogon occidentalis* D. Herbert and *Xanthorrhoea reflexa* D. Herbert.

Herbert was busy again in 1921, describing new species, publishing on *Xanthorrhoea* Smith and Santalaceae, and carrying out other routine work. He was assisted, as in 1920, by Miss V. Prowse in the re-organization of the herbarium. She was combining 'the several collections comprising it' and bringing up to date their nomenclature. Herbert proudly announced that 'when this is completed, it will be the best herbarium in the State, and will contain about 6,000 specimens, many of them types' (Herbert 1921, p. 15).

Charles Austin Gardner (1896–1970)

The year 1920 was a momentous one for herbaria as it marked the appointment of Gardner as a botanical collector in the Forests Department. (Herbert had a hand in this appointment. Recognizing Gardner's enthusiasm as an amateur botanist, Herbert had first tried to have him appointed as his own assistant. When this proved unsuccessful he recommended him to the Conservator of Forests.) Gardner had already built up a sizeable private herbarium, under the guidance of Mrs Emily Pelloe, and his efforts had an immediate impact on the rate of acquisition by the Forests Department's herbarium. This was heightened by his participation in a major expedition to the Northern Kimberley in his first year, from April–October 1921, when he brought back some 400 sets of specimens, writing a major report of 105 pages (Gardner 1923), describing 20 new species, several varieties and recording an additional family for the state.

Gardner was soon found a position in the Department of Agriculture as assistant to the Economic Botanist and Plant Pathologist, W. M. Carne. He com-

menced duty in 1924. Inevitably, he rose two years later to become Assistant Botanist and Plant Pathologist. In January 1929 he became, at the age of 33, Government Botanist and Curator of the State Herbarium. This came about as a result of Carne's resignation in 1928 and the subsequent division of his post. (Nothing is known of Carne's own collections which seem to have left the state.)

Amalgamation

Before departing the scene, Carne took one last action which was to have major consequences. He (Carne 1926) addressed the Australian and New Zealand Association for the Advancement of Science (ANZ-AAS) meeting of 1926, urging the formation of a central State Herbarium, by amalgamating the independent collections held by Agriculture, Forests and the Museum, the first being the most complete, and the only one under the control of a botanist. As soon as the Premier's Department began to enquire into this proposal the Director of the Museum, Ludwig Glauert, advised his trustees to oppose any attempt to remove the Museum's collection, especially as it contained types, was of a considerable size (2,000–3,000 specimens) and was vested in a permanent body, the Trustees. On the other hand, he was willing for a combined herbarium to be housed in the Museum.

The Department of Agriculture argued its case on the basis of having a botanist of standing on staff, which the Museum did not, a circumstance necessary for dealing with 'the important herbaria of the World' (Sutton 1928). Furthermore, it was claimed that it had been found undesirable, throughout the world, to link herbaria with museums, and that they were more naturally linked with botanic gardens, this idea having been put forward by Carne. As the debate continued, extending even to letters in the press, the Museum's case was bolstered by its acquisition, in July 1928, of the substantial private herbarium (some 5,000 specimens) of local naturalist O. H. Sargent (1880–1952). Sargent was convinced the Museum was 'the proper place for a National Herbarium' and made it a condition of his gift that 'the specimens will remain ALWAYS at the Museum under the control of a corporate Board, and will always be available to serious students' (Sargent 1928).

The Museum's arguments were to no avail, however, and the Government made its decision, presumably later in 1928, in favour of the combined central herbarium being attached to the Department of Agriculture. Although the Forests Department was a willing partner in the coalition, it was not until 1957 that the Trustees of the Museum and Art Gallery resolved to make over their herbarium collection for amalgamation. According to A. S. George (pers. comm. 1985), the Museum collection comprised 3,500–4,000 mounted sheets, together with a large quantity of unmounted material, much of it Sargent's.

Gardner, sometime after the Forests Department's herbarium had been incorporated with the State Herbarium, gave the size of the collection, on 31 July 1946, as 29,121 specimens. This was a dramatic rise from the 'less than 8,000 sheets' of 'the two herbaria which were brought together' (Gardner 1947, p. 21). (The figure did not include the Museum collection,

which was yet to be transferred, or the 1941 W. E. Blaeckall bequest.) In the same article Gardner noted the principal collectors represented in the State Herbarium. These were: himself (10,000 sheets), F. M. C. Schoek (1,500), W. V. Fitzgerald (1,500), M. Koeh, C. R. P. Andrews, N. T. Burbidge, B. T. Goadby and Blaeckall. Large numbers of duplicates had been received from Melbourne of Drummond, Maxwell and Mueller. As well, Gardner had procured, by exchange, many fragments of Diels and Pritzel, including types, from Berlin specimens when he went there during his term as Australian Botanical Liaison Officer (based in K) in 1937: the originals were soon after destroyed in the war, rendering the fragments at PERTH especially valuable today.

The Museum specimens were finally incorporated into the State Herbarium in 1959 or 1960 following that herbarium's move early in 1859 from the old Observatory Building to the Department of Agriculture's Head Office site at Jarrah Road, South Perth. Now renamed the Western Australian Herbarium, the combined state collection was finally moved in 1970 into its own, specially designed building, at the western end of the South Perth site where it is now set in a fine native plant garden. This year (1988), responsibility for its administration has been transferred from the Department of Agriculture to the Department of Conservation and Land Management.

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